

Abstract

A delivery head is provided that includes a delivery arm and a spray diverter constructed to divert a multiple phase treatment composition flowing through the delivery arm and diverted by the spray diverter to provide a target spray pattern. The delivery head includes an open area sufficient to provide the target spray pattern and to provide a back pressure of less than about 10 psig when a multiple phase treatment composition is flowing through the delivery head at a liquid flow rate of about 2 gal/min. to about 20 gal/min., and the volumetric ratio of the gas to liquid is between about 5:1 and about 75,000:1 at atmospheric pressure. A vessel including a delivery head and a method for treating a vessel interior surface are provided.